children could not walk. The reflexes remained exaggerated and the gait spastic.

In the second group of cases (consecutive to cerebro-spinal meningitis) the headache and feeling of distention were partially relieved.

A Chemical and Bacteriological Study of Hydrocephalic Fluid.—CONCETTI, of Rome (*Wiener klinische Wochenschrift*, 1897, No. 42, S. 934), finds that hydrocephalic fluid is sterile and faintly alkaline and of a specific gravity varying from 1005 to 1010, having no toxic action upon animals. The proportion of albumin remains constant (about 0.25 per cent.), despite repeated punctures. Glucose has never been found, nor has peptone, urea, mercury, or potassium iodide. Salts are present in small quantity. It therefore has the same chemical composition as physiological cerebro-spinal fluid, and consequently is not an exudate or transudate, but a true secretion.

The author has also studied, bacteriologically, the hydrocephalic fluid obtained in pathological conditions in which streptococci, staphylococci aurei et albi, pneumococci, and bacteria coli have been found. A series of observations has shown that their growth is checked, and that upon staphylococci an agglutinative effect is produced. The movements of the bacterium coli are rendered more sluggish. With inoculated animals he found that death occurred less quickly than in control-animals. At autopsy were found only slight superficial anatomico-pathological lesions, and often no changes at all were present.

PATHOLOGY AND BACTERIOLOGY.

UNDER THE CHARGE OF

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Visceral Changes in Extensive Superficial Burns.—The association of lesions of the internal organs with extensive superficial burns has long been known, and numerous theories have been proposed to explain their occurrence. The most recent of these is the theory that the internal lesions are the expression of a reaction to some poisonous substance in the blood, and based upon this theory is the conception that death, in cases of extensive superficial burns, is the result of a toxæmia of some kind. Nevertheless, up to the present time, all efforts to obtain the toxins responsible for this condition from the blood have either wholly failed or have yielded inconclusive results.

In the hope of shedding some light upon this obscure subject, BARDEEN has carefully studied the lesions present in the internal organs from five cases of extensive burns afforded by the Pathological Laboratory of the Johns Hopkins Hospital (*Journal of Experimental Medicine*, ii., No. 5, p. 501). In the nature and distribution of the lesions, Bardeen finds confirmation of the toxæmia theory.

The material studied was from children from sixteen months to eight years of age, and in all the cases the burns had been very extensive and death had occurred quickly—in from four to nine and a half hours after the injury. The lesions in the internal organs were strikingly alike in all.

The notes of the autopsies recorded the chief gross morbid changes as being cloudy swelling of the liver and kidney, softening and enlargement of the spleen, and, above all, swelling of the lymph nodes and of the gastro-intestinal lymph nodules. Moderate hyperæmia of the thoracic and abdominal organs was also noted. Cultures for bacteria made at the autopsies were negative, except that in one case the micrococcus lanceolatus was obtained from the lungs. The autopsies were all made very soon after death.

The microscope confirmed the naked-eye appearances of parenchymatous degeneration in the liver and kidneys, and revealed in addition marked degenerative changes in the blood. These last were shown more particularly in poikilocytosis and extensive fragmentation of the red corpuscles. Leucocytosis was also observed, associated with evidences of great reproductive activity and foci of degeneration of the bone-marrow. Thrombi were common only in the superficial layers of the skin.

Special interest attaches to the changes in the lymph nodes. These were in all the cases, and everywhere in the body, of the same fundamental character, though varying somewhat in extent and intensity. They consisted essentially of œdema, swelling and fragmentation of the lymphocytes, and in places of distinct areas of necrosis. These lesions were focal in distribution and were most marked in the centre of the follicles of the nodes, or, in other words, in the immediate area of the blood-supply. Similar degenerative changes were also observed in the Malpighian bodies of the spleen.

This distribution of the lesions in the lymph nodes and their similarity to the changes in the nodes observed in many of the infectious fevers, in which bacterial toxins in the blood are believed to be the cause of the lesions, lead Bardeen to the conclusion that the remote lesions in cases of superficial burns are the result of the presence in the blood of toxic substances similar in their action to the bacterial poisons. In fact, similar lesions in the lymphatic structures have been produced experimentally by the intravenous injection of bacterial toxins. The source of the toxic substances in cases of burns is as yet unknown, but that they are of a high degree of toxicity is clear from the rapidity with which the lesions develop.

Serum Diagnosis of Cholera.—ACHARD and BENSAUDE, whose careful work in connection with Widal's test for typhoid fever is well known, report the results obtained by them in similar examinations of the blood from fourteen cases of cholera Asiatica.—*La Semaine Médicale*, 1897, 151.

The serum used for the tests was sent to them from Cairo and from Alexandria, as were also samples of the stools from some of the cases. Bacteriologic examination of these latter confirmed the diagnosis of cholera.

Thirteen of the sera caused very positive agglomeration of cholera bacilli —all in dilution of 1 to 10 or 15, the majority in dilution of 1 to 20, and one even in dilution of 1 to 120. Of these thirteen cases the serum was obtained twice on the first day of the disease, in three instances on the second day, in four cases on the third day, twice on the fourth day, once on the sixth, and once on the twenty-eighth day. The appearance of the reaction in the very early days of the disease is important as increasing its diagnostic value, and